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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/880,634	06/11/2001	Wan-Uk Choi	45145/DBP/Y35	5926

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EXAMINER

CHANEY, CAROL DIANE

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 10/24/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/880,634

Applicant(s)

CHOI ET AL.

Examiner

Carol Chaney

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 7-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

***Election/Restrictions***

Applicant's election of Group I, claims 1-6 and species c, the semimetals of Group IIIA in Paper No. 4, filed 12 August 2003 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recitation in claim 2 of "semi-metals of Group 3A, Group 3B..." is indefinite because "semimetals" is not consistent with Group 3B. Group 3B contains the transition metal elements Sc, Y, La, and Ac. Group 3A, contains the elements B, Al, Ga, In, Tl. Of these, boron is the one semimetal or metalloid of Group 3A. Aluminum and gallium are considered "other metals" rather than semimetals.

(See [www.chemicalelements.com](http://www.chemicalelements.com))

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Tamaki et al., US Patent 5,698,341.

Tamaki et al. disclose carbon anode materials for lithium secondary batteries. Carbon is graphitized in the presence of a boron compound. The amount of boron in the anode material is between 1,000 ppm and 30,000ppm, or between 0.1 and 3 wt%. Thus, the amount of boron disclosed by Tamaki et al. is within the ranges claimed by the applicants. (See abstract.) Tamaki teaches the boron added to the carbon “exerts the effects of promoting the graphitization...”, and therefore is a catalyst. (See column 13, lines 1-6.)

Claims 1-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Takami et al., US Patent 5,753,387.

Takami et al. disclose lithium secondary batteries which include carbonaceous anode active materials. The carbon has regions of amorphous carbon and graphitic carbon. (See abstract.) the method of preparing the anode material includes adding a catalyst such as B, Mn or Cr to the reaction mixture. The boron remains in the carbon material after it is graphitized. (Column 13, line 53-column 14, line 5.) In further

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embodiments, Al or Si are added to a graphitizable carbon precursor to form to form anode active materials. (See column 13, lines 24-39.) The concentration of Al or Si it taught as being controlled to 0.1 to 10 atomic percent, which falls within applicants' claimed ratios. (See column 16, lines 42-48.)

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over either Tamaki et al., US Patent 5,698,341 OR Takami et al., US Patent 5,753,387.

As discussed above, either Tamaki or Takami disclose applicants' invention essentially as claimed, with the exception that the ratio of intensities of the 110 and 002 X-ray diffraction peaks is not disclosed in the references. However, the x-ray diffraction spectrum of a material is an inherent physical characteristic of a material. Therefore, since applicants' materials and the prior art materials are identical, the x-ray diffraction patterns of the materials will inherently be identical. Applicant's claimed negative active material is anticipated either by Tamaki et al. or by Takami et al. or in the alternative,

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would have been obvious to one of ordinary skill in the art based upon either of these prior art.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Takami et al., US Patent 6,350,544

Choi et al., US Patent 6,391,495

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carol Chaney whose telephone number is (703) 305-3777. The examiner can normally be reached on Mon - Fri 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 703-308-2383. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

  
Carol Chaney  
Primary Examiner  
Art Unit 1745

cc